1) Vroblesky, Don A., Paul M. Bradley and Francis H Chappelle. **1996**. Influence of Electron Donor on the Minimum Sulfate Concentration Required for Sulfate Reduction in a Petroleum Hydrocarbon-Contaminated Aquifer. ES&T, Vol. 30, No. 4, 1377-1381.

2) Hutchins, Stephen R., Dennis E. Miller and Alison Thomas. **1998**. Combined Laboratory/Field Study on the Use of Nitrate for an in Situ Bioremediation of a Fuel-Contaminated Aquifer. ES&T. Vol. 32. No. 12. 1832-1840.

Petroleum Oils and Lubricants (POL) facility at Eglin Air Force Base, FL – JP-4 jet fuel leak.
Problems with hydrogen peroxide stability in anaerobic aquifer
Two adjacent plots, nitrate distributed in one plot using a sprinkler application.
Vegetation stripped from nitrate-fed plot to facilitate infiltration
Conducted core sampling and treatability testing to confirm nitrate reducing conditions
Same level of degradation ~ 66% in both plots.
Monitoring data indicated that sulfate reduction dominated in the "control" plot.

3) Caldwell, Matthew E. and Joseph M. Suflita. **2000**. Detection of Phenol and Benzoate as Intermediated of Anaerobic Benzene Biodegradation under Different Terminal Electron-Accepting Conditions. ES&T, Vol. 34, No. 7, 1216-1220.

This articled suggests phenol and benzoate pathways for benzene degradation (under sulfate reducing and methanogenic conditions) and show that concerns regarding recalcitrant intermediates are unwarranted (benzoate and phenol degrade readily).

4) Cunningham, Jeffrey A., Halla Rahme, Gary D. Hopkins, Carmen Lebron, and Martin Reinhard. **2001**. Enhanced In Situ Bioremediation of BTEX-Contaminated Groundwater by Combined Injection of Nitrate and Sulfate. ES&T, Vol. 35, No. 8, 1663-1670.

Nitrate was preferentially consumed over sulfate
Degradation of total xylene appeared to be linked to sulfate utilization.
Benzene degradation also appears to have been stimulated by the nitrate and sulfate injection close to the injection well but only toward the end of the 15-month demonstration.
These results are consistent with the hypothesis that benzene can be biodegraded anaerobically after other preferentially degraded hydrocarbons have been removed.
Recommends the injection of oxygen to stimulate maximum aerobic degradation of target compounds prior to downgradient establishment of nitrate and sulfate reducing environments.

5) Ulrich, Ania C., Harry R. Beller, and Elizabeth Edwards. **2005**. Metabolites Detected during Biodegradation of 13C6-Benzene in Nitrate-reducing and Methanogenic Enrichment Cultures. ES&T, Vol. 39, No. 17, 6681-6691.

The data strongly support initial methylation of benzene to toluene, followed by transformation to benzoate.

Under nitrate reducing conditions, benzoate was degraded, then toluene, and then (ten day lag after toluene) benzene. Benzene was degraded with no delay when toluene and benzoate were not present.

Under methanogenic conditions, benzene was degraded in the presence of toluene, and was also not inhibited by the presence of benzoate. Also noted in the methanogenic culture was the transient appearance of benzoate, suggesting a pathway involving hydroxylation to phenol, as proposed in other studies.